

IN THE CLAIMS:

These claims will replace all prior versions of claims in the present application.

Claims 1-9. (Cancelled)

10. (Previously Presented) In the reforming apparatus that converts a gas mixture comprising a fuel gas, steam and air, into hydrogen,

a reforming apparatus comprising a heating unit for evaporating and heating the gas mixture, a distribution tube that distributes the heated gas mixture evenly to a plurality of branch ports disposed at one end thereof, a reforming unit filled with a reforming catalyst for catalyzing the gas mixture, a manifold comprising the distribution tube on the inside thereof, a CO removal unit filled with a CO removal catalyst used to remove CO from the gas reformed in the reforming unit, and a casing for housing the reforming unit, the manifold and the CO removal unit, wherein

the reforming unit comprises a reforming room composed of a reforming tube of which one end is connected to the branch port and from the other end of which the reformed gas is discharged, or configured by disposing two or more of the reforming tubes parallel to each other, and a feedback mechanism for passing the reformed gas around the outer periphery of the reforming tubes and sending the gas to the manifold.

11. (Previously Presented) The reforming apparatus specified in Claim 10, wherein the CO removal unit is located opposite or parallel to the reforming unit and communicates with the manifold.

12. (Previously Presented) The reforming apparatus specified in Claim 10, wherein

the feedback mechanism sends the reformed gas to the manifold through a reformed gas passage formed by the space between the reforming tubes located close to each other or between the reforming tubes and the casing, in the axial direction of the reforming tubes.

13. (Previously Presented) The reforming apparatus specified in Claim 10, wherein the reforming tubes can be freely removed and replaced.

14. (Previously Presented) The reforming apparatus specified in Claim 10, wherein a fuel trap unit is disposed between the manifold and the CO removal unit, to remove fuel gas from the reformed gas.

15. (Previously Presented) The reforming apparatus specified in Claim 10, wherein the manifold comprises a feed tube for feeding oxygen, air or steam to the reformed gas sent to the CO removal unit.

16. (Previously Presented) The reforming apparatus specified in Claim 15, wherein the CO removal unit comprises one section or two or more sections, and feed tubes are disposed on the upstream side of each section to supply oxygen, air or steam.

17-20. (Cancelled)

21. (New) A reforming apparatus comprising
a mixed gas feed tube that supplies a gas mixture composed of a fuel, water and air, and
a reforming tube that converts the gas mixture into a reformed gas containing

hydrogen, wherein

the reforming tube comprises two or more reforming rooms connected together in series, in which the gas mixture is supplied to one end and the reformed gas is discharged from the other end thereof,

each of the reforming rooms is filled with a first catalyst that catalyzes a partial oxidation reaction in an oxygen environment in the upstream portion thereof, and with a second catalyzer for reforming in the downstream portion, and

gas feed means are provided on the mixed gas feed tube, that directly supply the gas mixture to each reforming room, and

wherein a second heating gas tube is connected to the mixed gas feed tube, to introduce a high-temperature heating gas from the outside.

22. (New) A reforming apparatus according to claim 21,

wherein the gas feed means comprises an outer cylinder that covers one end of the reforming tube and at least a part of the side surface thereof, and forms a gap around the reforming tube in the peripheral direction that works as a passage for the gas mixture,

inlet ports are disposed on the side surface of the reforming tube and supply the gas mixture to each reforming room from the gap, and

the inlet ports comprise flow control mechanisms or flow regulate means for adjusting the flow of the gas mixture supplied to each reforming room.

23. (New) The reforming apparatus specified in Claim 21, wherein the gas feed means comprises a hollow penetration tube for passing the gas mixture through the interior of at least one of the reforming rooms, from one end thereof in the downstream direction of the reforming tube,

the penetration tube comprises inlet ports to supply the gas mixture individually to each reforming room, and

the inlet ports comprise flow control mechanisms or flow regulate means for adjusting the flow of the gas mixture introduced into each reforming room.

24. (New) The reforming apparatus specified in Claim 21, comprising a reformer housing that encases the reforming tube, and a first heating gas tube for introducing a high-temperature heating gas into the space formed between the reformer housing and the reforming tube, from the outside.